

TITLE OF THE ABSTRACT: The association between rotating shift work and metabolic syndrome among hospital employees.

DEPARTMENT: General Medicine

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OBJECTIVES: To study the prevalence of metabolic syndrome among shift working and daytime working employees in Christian Medical college, Vellore and to assess the association between rotating shift work and metabolic syndrome adjusting for the confounding factors.

METHODOLOGY: It was a cross sectional study with 2 groups: shift working and daytime working. The sample size was calculated to be 79 in each group. Participants included were staff of CMC hospital, Vellore who had five or more years of continuous work experience in shift work pattern or daytime pattern between the age group of 25 years to 50 years. The primary outcome studied was the prevalence of metabolic syndrome among shift working and daytime working employees. Secondary outcomes studied were the odds of developing metabolic syndrome among the shift working staff. The samples for the study were chosen proportionately from their respective designations using systematic random sampling technique. The subjects were approached in their work area. Self administered questionnaire was used to obtain relevant data and necessary measurements were taken by the primary investigator. Data was entered using Epidata version 3.1. The data was exported and analysed using Stata software version 13. Chi square test was used to measure the difference in the categorical variables according to the groups. Similarly, independent student t test was used to measure the mean difference in the continuous variables according to the groups. Univariate analysis and multivariable logistic regression were used to test the significance of demographic, lifestyle and clinical variables on metabolic syndrome.

RESULTS: We had approached 196 staffs as per random sampling. 36 were excluded and 160 were included in the study – 80 shift workers and 80 daytime workers. The baseline characteristics between the two groups were similar except for the following differences which were statistically significant: daytime workers were older, consisted of more vegetarians and had better quality sleep and the shift workers were more physically active. The prevalence of metabolic syndrome was 33.1% among the staff studied. The adjusted odds ratio for the shift workers to develop metabolic syndrome was 0.55 (95% CI 0.24 -1.29) with a P value of 0.17. The other metabolic outcomes were also not different between the two groups.

CONCLUSION: The prevalence of metabolic syndrome among the hospital employees studied in CMC, Vellore was 33.1% with no significant statistical difference between the two groups for the prevalence of metabolic syndrome after adjusting for other confounding factors.

Keywords: Metabolic syndrome, Shift workers, Daytime workers.